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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,798	07/19/2006	Tersuya Kaneko	2271/76554	1804
23432	7590	09/08/2008	EXAMINER	
COOPER & DUNHAM, LLP			HSIEH, SHIH WEN	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/586,798	<b>Applicant(s)</b> KANEKO ET AL.
	<b>Examiner</b> shih-wen hsieh	<b>Art Unit</b> 2861

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 19 July 2006.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 9 is/are allowed.

6) Claim(s) 1-6 is/are rejected.

7) Claim(s) 7 and 8 is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 19 July 2006 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-166/08)  
Paper No(s)/Mail Date 7-19-06

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Claim Objections***

2. Claim 1 is objected to because of the following informalities:  
Line 4, please change "the record-medium" into "a record-medium" to correct a minor lack of antecedent basis problem.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US Pat No. 5,270,738) in view of Masaji (JP 04-344255, from IDS dated July 19, 2006).

In regard to:

Claim 1:

Takahashi et al. teach:

An image forming apparatus comprising:

a recording head (1a, 1b, 1c or 1d, fig. 1) having a nozzle (34, see col. 4, lines 18-24 and fig. 2) configured to eject a liquid drop of recording liquid so as to form an image on the recording-medium (27, fig. 1) with a liquid drop ejected from the nozzle of the recording head;

a conveyer (6, see col. 5, lines 4-6) configured to electrostatically hold and convey a recording-medium (27) by a charge provided to the conveyer (see col. 5, lines 9-18).

The device of Takahashi et al. **DIFFERS** from claim 1 in that it does not teach:

a cleaning device configured to clean a nozzle face of the recording head based on a tolerance threshold value of contamination of the nozzle face generated by the ejection of a liquid drop and the number of liquid drops ejected from the recording head for image formation.

To this issue, Masaji teaches in his English constitution: "Respective conditions such as: (1) a class of paper, (2) temperature of a print head. (3) atmosphere humidity, (4) recording duty, (5) whether the recording head is easy to discharge an ink spray or not are detected. After adding up, a factor indicating a degree, which contributes to a **quantity** to be stuck to a discharging surface of an ink drop or the like under respective conditions, an interval optimum for sweeping and wiping is automatically set.

In Masaji's teaching above, the **quantity** corresponds to the "tolerance threshold value" in claim 1 of the instant application. Because such a tolerance threshold value is simply a quantity.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to include the factor, which contributes to a **quantity** to be stuck to a discharging surface of an ink drop or the like under respective conditions as taught by Masaji for the purpose of initiating a wiping action to wipe clean the nozzle face of the recording head so as to lengthen the life of the recording head and the wiper blade.

Claim 2:

Masaji in the device of Takahashi et al. as modified in view of Masaji further teaches:

wherein the nozzle face of the recording head is cleaned according to a character printing mode (see rejection to claim 1 above, because character printing mode is considered as the recording duty of the recording head).

Claim 3:

Masaji in the device of Takahashi et al. as modified in view of Masaji further teaches:

wherein the nozzle face of the recording head is cleaned according to an environmental condition (see rejection to claim 1 above, because atmosphere humidity is considered as the environmental condition).

Claim 4:

Masaji in the device of Takahashi et al. as modified in view of Masaji further teaches:

wherein the nozzle face of the recording head is cleaned according to a kind of the recording-medium (see rejection to claim 1 above, because a class of paper is considered as the kind of the recording-medium).

Claim 5:

Masaji in the device of Takahashi et al. as modified in view of Masaji further teaches:

wherein the nozzle face of the recording head is cleaned according to a kind of the recording liquid (see rejection to claim 1 above, because ink has several kinds such as: pigment ink, dye ink, aqueous ink, etc. They all have different ingredients and

different viscosities. So the cleaning conditions for using different kind of ink are different).

Claim 6:

The image forming apparatus as claimed in claim 1, wherein the nozzle face of the recording head is not cleaned when the kind of the recording medium is a predetermined kind.

Rejection:

An ink jet printer can print not only on paper printing medium but also on (over head projector (OHP) plastics. In paper printing, paper dusts are generated, therefore nozzle face needs to be cleaned regularly. In using plastics, generally there is no dust being generated. Therefore, it can be said as when a predetermined kind of recording medium such as plastic is used for printing, the recording head is not cleaned.

***Allowable Subject Matter***

5. Claim 9 is allowed.

6. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter:

In regard to:

Claim 7:

The primary reason for the allowance of claim 7 is the inclusion of the limitation of a cleaning device configured to control a quantity of the charge provided to the conveyer according to at least one of an environmental condition and a kind of the recording-medium. It is this limitation found in each of the claims as they are claimed in the combination, which has not been found, taught or suggested by the prior art of record that makes this claim allowable over the prior art.

Claim 8:

The primary reason for the allowance of claim 8 is the inclusion of the limitation of wherein the number of cleaning of the nozzle face of the recording head when an image is formed on a back face of the recording-medium is less than the number of cleanings when an image is formed on a front face of the recording-medium. It is this limitation found in each of the claims as they are claimed in the combination, which has not been found, taught or suggested by the prior art of record that makes this claim allowable over the prior art.

Claim 9:

The primary reason for the allowance of claim 9 is the inclusion of the limitation of a frequency of cleaning of a nozzle face of the recording head when images are formed on both faces of the recording-medium is less than a frequency of cleaning of

the nozzle face of the recording head when an image is formed on one face of the recording medium. It is this limitation found in each of the claims as they are claimed in the combination, which has not been found, taught or suggested by the prior art of record that makes this claim allowable over the prior art.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to shih-wen hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 9/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Luu can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/shih-wen hsieh/

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